

Aero-acoustic Measurement and Monitoring of Dynamic Pressure Fields, Phase I

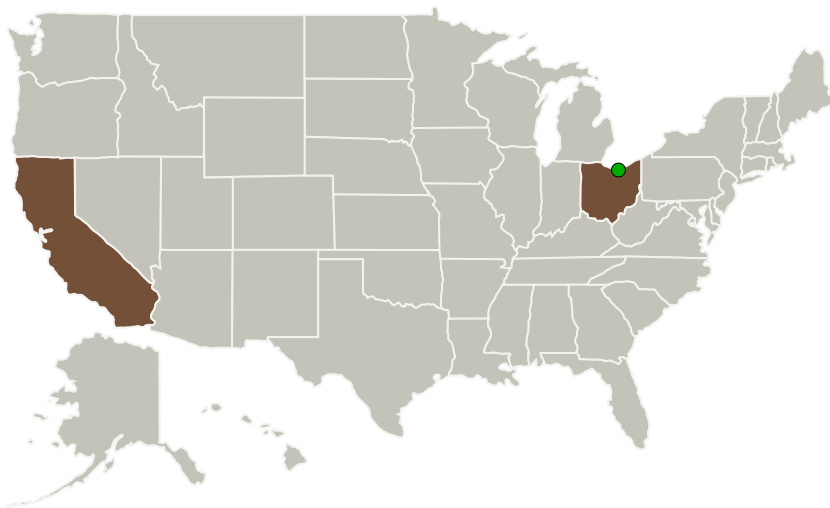
Completed Technology Project (2012 - 2012)



Project Introduction

This innovative and practical measurement and monitoring system optimally defines dynamic pressure fields, including sound fields. It is based on passive acoustic tomography technologies. In contrast to most monitors it is unique in measuring absolute sound intensity magnitude at each location in the sound field. Most importantly, the measured noise source absolute intensity is specific to the generating mechanism/source. Intensity is independent of the monitored space; Source intensity of a generator is the same value in both free space and in hard, reverberant enclosure environments. Measured absolute intensities are transferable to other physical locations. In other words, experimental data is transportable and is directly applicable to any other real-world system or structures. The mesh or cell size used by the monitor/scanner is fixed by the physics of the noise generation mechanism, not by computer power considerations. The software can be run in a standard workstation, and with careful implementation of standard electronics can provide real time acoustic noise field monitoring. The AeroNoiseScanner [ANS] scanner is a natural extension and enhancement of an analytical and experimental program involving many decades of research and development programs and financial investments.

Primary U.S. Work Locations and Key Partners



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| Organizations Performing Work | Role | Type | Location |
|--------------------------------|-------------------------|-------------|-----------------------|
| Greene R&D International, Inc. | Lead Organization | Industry | Los Gatos, California |
| ● Glenn Research Center(GRC) | Supporting Organization | NASA Center | Cleveland, Ohio |

| Primary U.S. Work Locations | |
|-----------------------------|------|
| California | Ohio |

Project Transitions

February 2012: Project Start

August 2012: Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/137975>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Greene R&D International, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

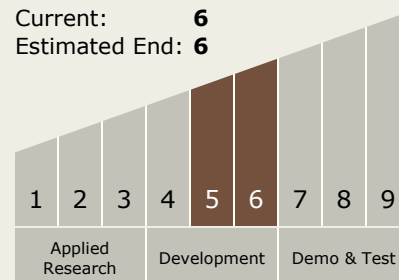
Carlos Torrez

Principal Investigator:

David W Greene

Technology Maturity (TRL)

Start: 5
Current: 6
Estimated End: 6



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Technology Areas

Primary:

- TX15 Flight Vehicle Systems
 - └ TX15.1 Aerosciences
 - └ TX15.1.4 Aeroacoustics

Target Destinations

The Sun, Earth, The Moon,
Mars, Others Inside the Solar
System, Outside the Solar
System